REMARKS

In response to the above-identified Office Action, Claims 1-16 were examined and rejected. Claims 17-24 have been withdrawn. Applicants amend Claims 1 and 14, cancel Claim 9 and submit additional Claims 25-27. Applicants submit that no new matter is added herein, as additional Claims 25-27 are supported at paragraph [0027], paragraph [0024], and Figure 4 of the application as originally filed. Applicants respectfully request reconsideration of Claims 1-8 and 10-16, and consideration of additional Claims 25-27 in view of at least the following remarks.

I. Claims Rejected under 35 U.S.C. §102

The Patent Office rejects Claims 1-3, 8-9 and 11 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,682,965 issued to Noguchi et al. (Noguchi). It is axiomatic that to be anticipated, every limitation of the claim must be disclosed in a single reference.

Applicants respectfully disagree with the rejection above of independent Claim 1, as amended, for at least the reason that the cited references do not teach or suggest an epitaxial layer comprising a silicon alloy material disposed in a first and second junction region and having a non-planar relationship with the surface of the substrate, as required by amended Claim 1.

Noguchi teaches silicon epitaxial layers 33 and 34 formed on source drain 14 and 15. However, the Patent Office has not identified, and Applicants are unable to find, any teaching or suggestion in Noguchi that layers 33 and 34 are a silicon alloy layer, such as a mixture of silicon and a metal, as Noguchi only describes the layers 33 and 34 as being silicon. (*See*, col. 6, lines 7-14.) Moreover, Noguchi describes source drain 14 and 15 formed in an upper portion of strain effect layer 24, where layer 24 is also a silicon layer, but not a silicon alloy layer. (*See*, col. 5, lines 13-15 and 26-30.) Consequently, Noguchi does not teach or suggest the above-cited limitation of amended Claim 1.

In addition, Applicants note that U.S. Patent No. 6,214,679 issued to Murthy et al. (Murthy) (the other reference cited in the November 30, 2004 Office Action) teaches recesses filled with silicon germanium, such that the silicon germanium exhibits many microscopic "faults" and "dislocation" which aid in the solid state diffusion of dopants through the silicon germanium alloys. (*See*, col. 5, lines 42-43; col. 6, lines 12-17.) However, Murthy does not teach or suggest that the silicon alloy material is an epitaxial layer of material, such as a layer having the same crystalographic characteristic as the material it is formed upon (e.g., an epitaxial layer as known in the art). Instead, Murthy teaches that microscopic faults and dislocations exist and are desirable in a layer of silicon alloy on the substrate for diffusion of dopants, where such faults and dislocations will cause a distinction in crystalographic characteristics between the silicon alloy material and the substrate causing the silicon alloy material not to be an epitaxial layer with respect to the substrate.

Hence, Applicants respectfully request that the Patent Office withdraw the rejection above for Claim 1.

Applicants submit that Claims 2-3, 8 and 11 being dependent upon allowable base Claim 1, as amended, are patentable over the cited references for at least the reasons stated above. Thus, Applicants respectfully request that the Patent Office withdraw the rejection above for Claims 2-3, 8 and 11.

II. Claims Rejected under 35 U.S.C. §103

The Patent Office rejects Claims 4-7, and 14-15 under 35 U.S.C. §103(a) as being unpatentable over Noguchi. To render a claim obvious, all limitations of that claim must be taught or suggested by at least one properly combined reference.

Applicants submit that Claims 4-7, being dependent upon allowable base Claim 1, as amended, are patentable over the cited references for at least the reasons stated above. Thus, Applicants respectfully request that the Patent Office withdraw the rejection above for Claims 4–7.

Next, Applicants respectfully disagree with the rejection above for independent Claim 14 for at least the reason that the cited references do not teach or suggest a silicon alloy material having a silicon alloy lattice spacing that is different than a lattice spacing of the substrate disposed in each of a first and second junction region, such that a surface of the junction region are superior to the top surface of a substrate by a length sufficient to cause a strain in the substrate, as required by Claim 14. An argument analogous to the one made above with respect to Noguchi not teaching or suggesting forming a silicon alloy material in a junction region applies to Claim 14 as well. Hence, the Patent Office has not identified, and Applicants are unable to find, any teaching or suggestion in Noguchi that accounts for the above-noted limitations of Claim 14.

In addition, an argument analogous to the one above with respect to Murthy not teaching or suggesting the limitations of Claim 1 applies here as well. Specifically, Murthy teaches microscopic faults and dislocations, which aid in the diffusion of dopants through the silicon germanium alloy. Thus, Applicants assert that Murthy does not teach or suggest the silicon alloy material having a lattice spacing that causes a strain in the substrate because Murthy teaches that microscopic faults and dislocations exist and are desirable, and such faults and dislocations relax the boundary between the silicon alloy material and the substrate, thus relieving strain caused in the substrate.

Hence, neither Noguchi, Murthy nor the combination teach or suggest the above-cited limitations of independent Claim 14. Thus, for at least this reason, Applicants respectfully request that the Patent Office withdraw the rejection above of Claim 14.

Applicants submit that Claim 15, being dependent upon allowable base Claim 14, is patentable over the cited references for at least the reasons stated above. Thus, Applicants respectfully request that the Patent Office withdraw the rejection above for Claim 15.

The Patent Office rejects Claims 10, 12-13, and 16 under 35 U.S.C. §103(a) as being unpatentable over Noguchi in view of Murthy.

Applicants submit that Claims 10, 12-13, and 16, being dependent upon allowable base Claim 1, as amended, and Claim 14, are patentable over the cited references for at least the reasons stated above. Thus, Applicants respectfully request that the Patent Office withdraw the rejection above of Claims 10, 12-13, and 16.

III. Additional Claims 25-27

Applicants note that additional Claims 25-27 describe an apparatus including an epitaxial layer on a substrate with the epitaxial layer comprising a silicon alloy material having the same crystalographic characteristic, crystal structure, or crystal grade as the substrate material. Hence, arguments analogous to those provided above apply to Claims 25-27 as well. Thus, Applicants respectfully request consideration of additional Claims 25-27.

CONCLUSION

Applicant has amended the claims to recite features that are not taught or suggested by the references. No new matter is introduced by the Applicant's claim amendments, which are supported in Applicant's specification and are necessary for placing the present application in condition for allowance.

In view of the foregoing, it is believed that all claims now pending, namely Claims 1-16 patentably define the present application over the prior art of record, and are therefore in condition for allowance; and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800, ext. 784.

Respectfully submitted,

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Dated: January 31, 2005

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on January 31, 2005.

Nadya Gordon 1/31/05

Nadya Gordon Date